INCH-POUND

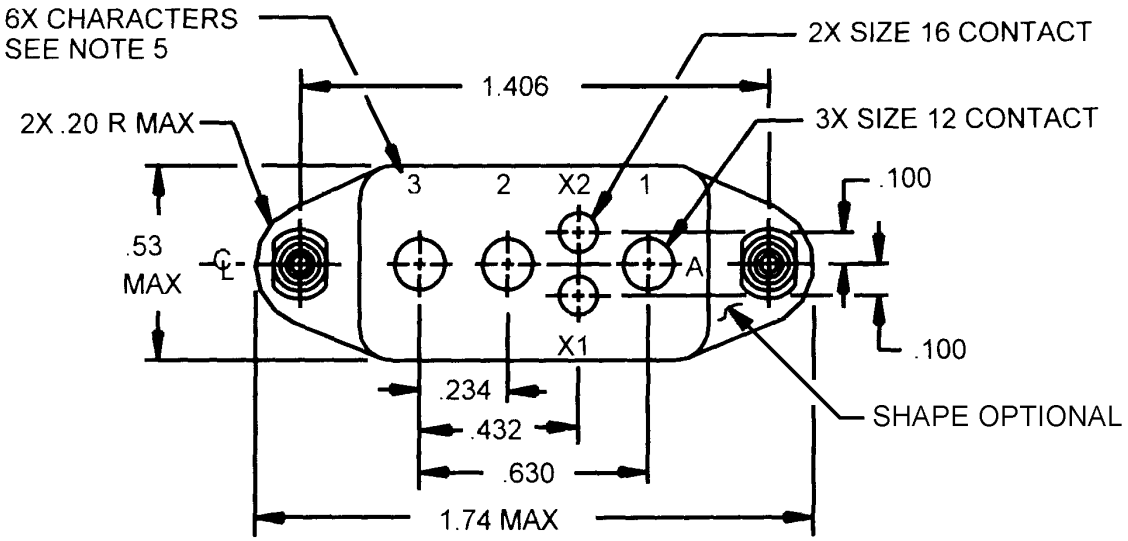
MIL-DTL-12883/55A
18 February 2003
SUPERSEDING
MIL-PRF-12883/55
24 January 1996

DETAIL SPECIFICATION SHEET

SOCKETS, PLUG-IN ELECTRONIC COMPONENTS
SOCKET FOR MIL-PRF-6106 RELAYS

This specification is approved for use by all Departments and Agencies of the Department of Defense.

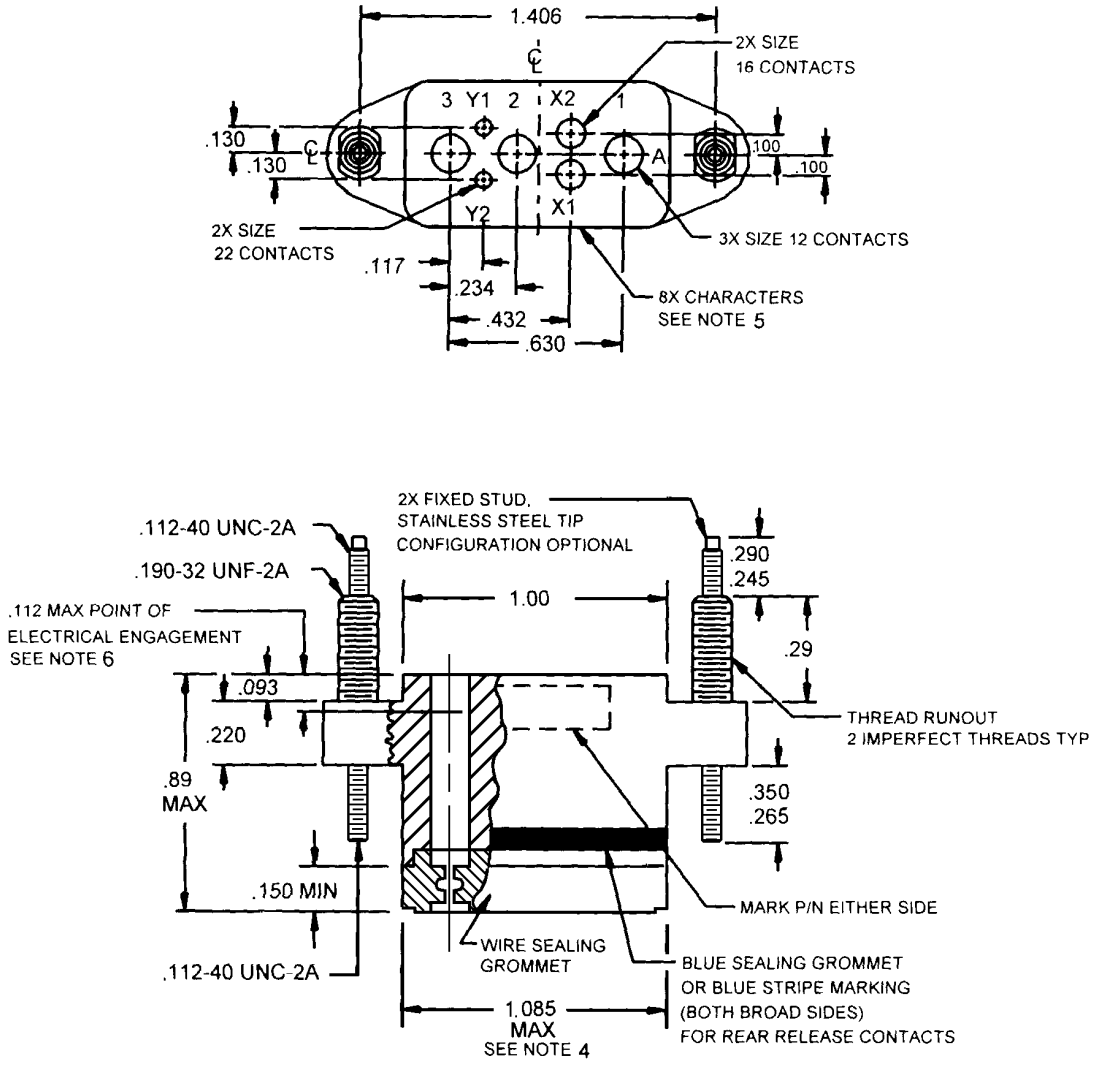
The requirements for acquiring the product described herein
shall consist of this specification and MIL-DTL-12883.



MATING FACE

-01 AND -02

FIGURE 1. Socket configurations.



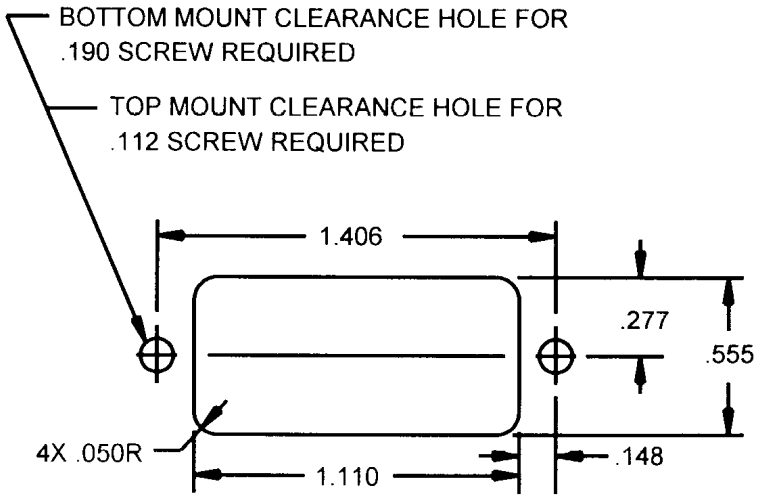
FRONT VIEW

MATING FACE

-03

ALL OTHER DIMENSIONS SAME AS -01

FIGURE 1. Socket configurations – Continued.

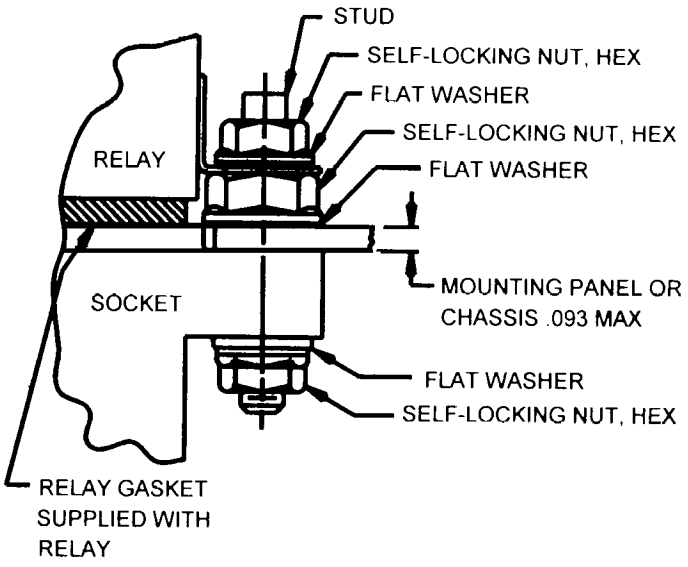


Recommended mounting dimensions

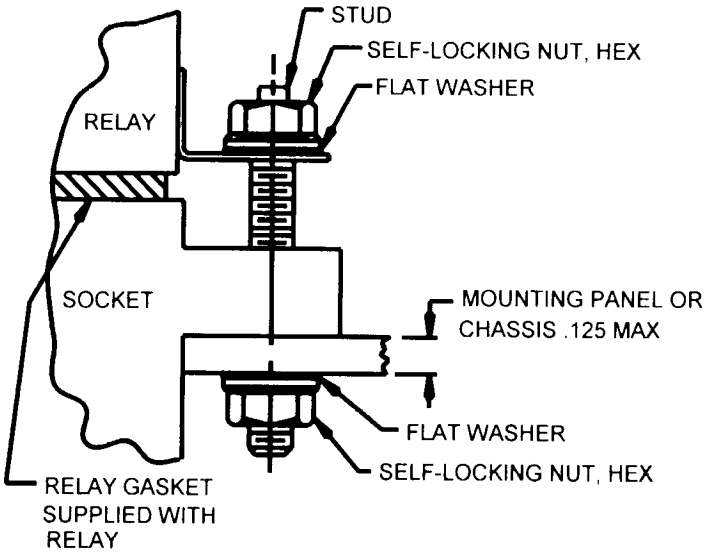
Inches	mm	Inches	mm	Inches	mm
.050	1.27	.20	5.08	.432	10.97
.093	2.36	.220	5.59	.53	13.46
.100	2.54	.234	5.94	.555	14.11
.112	2.84	.245	6.22	.630	16.00
.117	2.97	.290	7.37	.89	22.61
.130	3.30	.29	7.4	1.00	25.40
.148	3.76	.265	6.73	1.085	27.56
.150	3.81	.277	7.04	1.110	28.19
.190	4.83	.350	8.89	1.406	35.71
				1.74	44.20

NOTES:
1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Unless otherwise specified, tolerance is ± .005 inch (0.13 mm) for three place decimals and ± .01 inch (0.25 mm) for two place decimals.
4. Wire sealing grommet may not fully cover socket body.
5. Marking shall be characters which are molded .035 inch (0.89 mm) minimum. Ink marking optional (see MIL-STD-1285).
6. Point of electrical contact engagement, from mating face of socket insulator to the socket contact.
7. For mating relay see table I.
8. For socket mounting see figure 2.

FIGURE 1. Socket configurations – Continued.



Bottom mount (typ)



Top mount (typ)

Inches	mm
.093	2.36
.125	3.18

FIGURE 2. Socket mounting.

REQUIREMENTS:

Design and construction: See figures 1 and 2.

Insulator: Diallyl phthalate, in accordance with ASTM D5948, type SDG-F, any glass filled thermoplastic material in accordance with ASTM D5204.

Color: Color shall be optional providing that the color provides a contrasting background for the blue sealing grommet/blue color bands indicating rear release contacts.

Grommet: Silicon rubber.

Mounting hardware: Corrosion resistant steel or steel with cadmium/chromate finish.

Electrical:

Contacts: Contacts shall be removable crimp type in accordance with MIL-C-39029/92 (see table I).

TABLE I. Dash numbers and configurations.

Dash number	Contact size		Number of contacts	Contact designation M39029	Mating relay M6106/
	Mating end	Wire barrel			
01	16 12	16 12	2 3	/92 – 533 /92 – 535	19-004, -007, -012, -017, -022
02	16 12	16 16	2 3	/92 – 533 /92 - 536	19-004, -007, -012, -017, -022
03	22 16 12	22 16 12	2 2 3	/92 – 531 /92 – 533 /92 – 535	20-002

Insulation resistance: 1,000 megohms minimum, the following conditions shall apply:

Test pin diameters:

Size 12: .0940 $\pm$ .0010 inch (2.39 $\pm$ 0.025 mm).
Size 16, .0620 $\pm$ .0010 inch (1.575 $\pm$ 0.025 mm).
Size 22, .0300 $\pm$ .0010 inch (0.762 $\pm$ 0.025).

Dielectric withstanding voltage:

Sea level: Test voltage, 1500 V rms.

High altitude 80,000 feet (24,384 meters):

Test voltage: 500 V rms.

Test pin diameters:

Size 12, .0940 ± .0010 inch (2.39 ± 0.025 mm).
Size 16, 0.0625 ± 0.0010 inch (1.595 ± 0.025 mm).
Size 22, .0300 ± .0010 inch (0.762 ± 0.025 mm).

Environmental:

Temperature range:

Operating temperature range: -70°C to +125°C.

Wire sealing: A resilient grommet is permanently bonded to the wire entry face of the socket so as to provide moisture sealing capabilities for AWG size 12, 16, and 22 wire as applicable (see figure 1, front view).

Mechanical:

Vibration (sinusoidal): In accordance with MIL-STD-202, method 204, test condition G.

a. Except that the frequency range shall be varied logarithmically between the limits of 10 Hz and 3,000 Hz.
b. Except that the procedure of method 201 of MIL-STD-202 may be applied during 10 Hz to 55 Hz band of the vibration frequency range.
c. Qualified mating relay shall be used as a test gauge.

Vibration (random): In accordance with mIL-STD-1344, method 2005, test condition V, letter G, with a test duration 15 minutes. The mating relay shall be used as the test gage.

Shock (mechanical): In accordance with MIL-STD-202, method 213, condition C, except peak value shall be 200 g’s.

Mounting hardware: The mounting hardware shall allow mounting the socket above, or below the panel or chassis (see figure 2), and shall allow mounting and securing the relay to the socket without disturbing the mounted socket or access to the wiring side of the socket. The hardware shall provide the nominal spacing between socket surface and relay mounting flange, regardless or mounting configuration.

Supplied with relay socket:

2 each per mounting stud:

.112-40 self locking nuts (.206 max dia x .176 max height).

.112 flat washers (.220 max O.D. x .018 max thick).

1 each per mounting stud:

.190-32 self locking nuts (.330 max dia x .190 max height).

.190 flat washers (.360 max O.D. x .019 max thick).

Fixed mounting studs: Studs shall be fixed into the mounting flange of the socket and shall be designed so as to prevent rotation of the stud within the flange (see figure 2).

Insertion and withdrawal forces: The insertion and withdrawal forces of the relay and socket shall be as specified as in table II.

TABLE II. Insertion and withdrawal forces.

Condition	Test	M12883/55	
		-01, -02	-03
Initial	Insertion force (max)	15 lbf (66.72 N)	17.5 lbf (77.84 N)
	Withdrawal force (min)	1.0 lbf (4.45 N)	1.1 lbf (4.45 N)
After 10 insertions and withdrawals, before vibration	Insertion force (max)	15 lbf (66.72 N)	17.5 lbf (77.84 N)
	Withdrawal force (min)	1.0 lbf (4.45 N)	1.1 lbf (4.45 N)
After vibration	Insertion force (max)	14 lbf (62.27 N)	16.25 lbf (72.28 N)
	Withdrawal force (min)	.75 lbf (3.34 N)	.82 lbf (3.65 N)

Contact installation tools: See table III.

TABLE III. Contact installation tools.

Nomenclature	Tool Part or Identifying Number (PIN)		
	Contacts Size 22-22	Contacts Size 16-16	Contacts Size 12-12, 12-16
Crimp Tool Positioner	M22520/2-01 M22520/2-06	M22520/1-01 M22520/1-02	M22520/1-01 M22520/1-02
Insertion/removal tool Unwired Wired	 M81969/30-01 M81969/14-01	 M81969/30-06 M81969/14-03	 M81969/30-07 M81969/14-04

Torque: Relay socket and hardware shall be subjected to torque testing as specified in table IV. Sockets shall be installed in mounting panel when test torque is applied. No visual evidence of physical damage shall be permitted. Torque shall be maintained for a reasonable period of time to insure stud, socket, and associated hardware have not been damaged (see table IV).

TABLE IV. Torque requirements (installed in panel conditions).

Thread size	Torque			
	Testing		Installation	
	Inch-pounds	Newton-meters	Inch-pounds	Newton-meters
.112-40	8 + 1 -0	0.90 + .11 -0	4 $\pm$1	0.45 $\pm$ .11
.190-32	24 +1 -0	2.71 + .11 -0	18 $\pm$1	2.03 $\pm$ .11

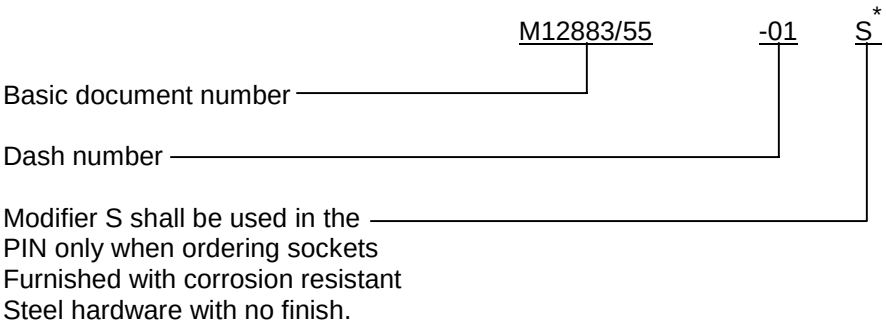
Weight: Maximum weight of relay, socket, all contacts and all associated hardware shall be as specified in table V.

TABLE V. Weight.

Part designations M12883/55	Maximum weight	
	Pounds	Grams
-01 through –03	.073	33

PIN: The PIN shall be marked on the socket body as shown in the example (see figure 1). The PIN shall consist of the basic number of this specification sheet and the dash number from table I.

Example



* For acquisition of these sockets, parts identified with an "S: modifier shall be corrosion resisting steel (CRS), and parts without an "S" modifier shall be cadmium chromate finish. No mixing of hardware types shall be permitted.

Ordering data: Sockets without contacts may be ordered when so indicated in the ordering data (see MIL-DTL-12883). This applies only to original equipment manufacturers (OEMs) and subcontractors. All direct shipments to the government shall include all applicable contacts and mounting hardware. The PIN to be marked on the socket shall be as shown in the PIN example (see figure 1 and table I).

The Government PIN, specified in table VI, supersedes the following commercial part numbers.

TABLE VI. Supersession and cross reference data.

Active Government PIN	Superseded number
	CAGE 58982
M12883/55-01	RES112035
M12883/55-02	RSE112036
M12883/55-03	RSE112044

CONCLUDING MATERIAL

Custodian:
Army – CR
Navy - EC
Air Force – 11
DLA – CC

Preparing activity:
DLA – CC

(Project 5935-4344-20)